

TIMELINE

History of Naval Medical Research

- 1775 – The Continental Congress voted to arm two ships to intercept transports carrying munitions and stores to the British army in America. This was the original legislation out of which the Continental Navy grew and as such constitutes the birth certificate of the Navy.
- The first American Naval Surgeon, Joseph Harrison, and two surgeon's mates, Henry Tillinghast and John Scott, were aboard the *Alfred* when John Paul Jones hoisted the first American flag to fly from a warship.
- 1789 – The United States Navy was created by Act of Congress. Doctors were made commissioned officers.
- 1811 – Dr. William Paul Crillon Barton was commissioned by the Secretary of the Navy to submit his recommendations for “conducting hospitals and institutions for the sick.”
- 1830 – The first patients were received at the U.S. Naval Hospital, Norfolk, Virginia, the first hospital built from the marine hospital fund.
- 1842 – The Bureau of Medicine and Surgery (BUMED) was established by an Act of Congress. Dr. William P.C. Barton became the first Chief of the Bureau (later known as the Surgeon General).
- 1850 – Navy surgeon E.R. Squibb set up a laboratory to manufacture, process, and test medicaments. Research included standardizing large-scale production of ether and chloroform.
- 1853 – An Act of Congress authorized the building of a Naval Medical Laboratory on the grounds of the Brooklyn Naval Hospital.
- 1877 – A course of instruction for junior medical officers was established at the Brooklyn Naval Hospital.
- 1883 – The Museum of Naval Hygiene was founded in Washington, D.C. Space became available for the examination of pathology specimens and a system of Navy medical research evolved, with particular emphasis on chemistry and tropical medicine.
- 1902 – The Museum of Naval Hygiene became the U.S. Naval Museum of Hygiene and Medical School.

- 1915 – A chemical laboratory and testing department was organized at the Naval Medical Supply Depot, Brooklyn, New York, to ensure the purity of drugs and food products purchased for the Navy and for the maintenance of Navy standards for such products.
- 1924 – The Division of Medical War Planning of BUMED was organized to study the experience of World War I, collect facts related thereto, and apply these facts in the formulation of plans for medical procedure in possible future wars.
- 1927 – Epochal Naval research work elucidated the cause of heat stroke.
- 1929 – The Division of Aviation Medicine of BUMED was established to study the specialized problems arising in connection with the physical qualifications and requirements of flight personnel.
- 1934 – Naval Laboratory Research Unit-1 was activated as a reserve unit with headquarters in the Life Sciences Building on the University of California, Berkeley, campus.
- 1935 – The Naval Medical Center, Washington, D.C., was established to function as a medical diagnostic and educational center.
- 1939 – The Naval School of Aviation Medicine (SAM) was set up at Pensacola, Florida.

The Medical Research Section was established in the Bureau of Aeronautics (BuAer). With this development, research on aviation medical problems was begun as a separate entity.

- 1940 – The “1000 Aviator Study” commenced at SAM. The study was a longitudinal investigation of the process of aging. It continued at roughly five-year intervals since 1952 for the evaluation of the remaining members of the original group of 1,056 men.
- 1941 – The Research Division of BUMED was established.

The Office of Scientific Research and Development was created within the Office of Emergency Management for the purpose of ensuring adequate provision for research on scientific and medical problems.

The Naval Research and Development Board was organized.

Naval Laboratory Research Unit-1 mobilized as an active duty unit at the University of California, Berkeley, to study the epidemiological problems of such diseases as influenza, meningitis, catarrhal fever, and several tropical diseases.

1942 – The National Naval Medical Center (NNMC), Bethesda, Maryland, opens. The **Naval Medical Research Institute (NMRI)** was commissioned as one of the commands of NNMC. The original staff consisted of 13 officers and 50 enlisted.

The Aviation Medical Equipment Laboratory (AMEL) was founded in Philadelphia.

1943 – The mission of Naval Laboratory Research Unit-1 was broadened and its name was changed to Naval Medical Research Unit No. 1 (NAMRU-1).

The Naval Medical Field Research Laboratory (NMFRL) was established at Camp Lejeune by joint agreement of the Commandant of the Marine Corps and the Chief, BUMED.

1944 – Naval Medical Research Unit No. 2 (NAMRU-2) was established at the Rockefeller Institute in New York City.

The Naval Unit Special Projects Division, Chemical Warfare Service, was established at Fort Detrick, Frederick, Maryland as a field activity of BUMED.

1945 – NAMRU-2 moved to Guam to investigate medical problems of Pacific operations.

NMRI researchers were awarded the *Wellcome prize* of 1945 from the Military Surgeons of the United States for their pioneering work in the field of blast injury protection.

1946 – NAMRU-2 was redesignated the U.S. Naval Institute of Tropical Medicine (NITM).

Naval Medical Research Unit No. 3 (NAMRU-3) was commissioned in Cairo, Egypt to study, prevent, and control epidemic diseases and diseases endemic in subtropical areas occupied by the Navy.

The Naval Medical Research Laboratory (NMRL) was established as a subordinate activity of the U.S. Naval Submarine Base, New London, Connecticut under the management and technical control of BUMED.

The Office of Naval Research (ONR) was established.

The Naval Submarine Medical Research Laboratory (NSMRL) was established.

The Aeronautical Medical Equipment Laboratory (AMEL) was established.

The U.S. Naval School of Aviation Medicine and Research (SAM) was assigned to the Naval Air Training Command.

SAM's Operation Everest demonstrated that it was possible to adapt man under laboratory conditions to simulated high altitudes and dramatized the fact that they could reach altitudes equivalent to Mount Everest without supplementary oxygen. The experiment was a landmark in terms of adapting to high altitude under laboratory conditions.

1947 – The Naval Medical School established a bone and tissue bank.

The Naval Institute for Dental and Biomedical Research (NIDBR) was established.

NAMRU-2 developed a therapeutic regimen for cholera utilizing whole blood and plasma-specific gravity as guides. The work was a breakthrough in determining life-saving extracellular fluid requirements.

NAMRU-2 (NITM) was disestablished.

1948 – Naval Medical Research Unit No. 4 (NAMRU-4) was commissioned at the Naval Training Center, Great Lakes, Illinois to develop and conduct research to provide effective prevention and control of acute respiratory diseases in military personnel.

1949 – The Aviation Medical Acceleration Laboratory (AMAL) was established to study the effects of acceleration.

1950 – The Naval Metabolic Research Facility was established at the Naval Hospital, Oakland, California.

1951 – SAM was designated as a separate command.

Field medical schools were commissioned at Camp Pendleton and Camp Lejeune.

1953 – NAMRU-4 first isolated the influenza virus in tissue culture. A year later, they identified the first influenza type B variant.

1955 – NAMRU-2 was reestablished in Taipei, Taiwan.

1956 – A Stratolab balloon designed to gather data necessary for flight safety at high altitudes soared to 76,000 feet in flight, a new record for manned balloons.

- 1957 – The Naval Aviation Medical Center was established. SAM and the Naval Hospital, Pensacola, Florida, became component commands of the center.
- 1958 – Along with Army personnel, SAM designed and developed a comprehensive life support system that carried the first primate into space. In 1959, NASA joined the team and helped conduct a second flight experiment using the same basic life support system. This experiment resulted in the first recovery of live primates from space.
- 1959 – The Navy Toxicology Unit was established as a component of the National Naval Medical Center, Bethesda, Maryland.

The Naval Medical Neuropsychiatric Research Unit (NMNPRU) was established in San Diego, California to conduct research in the area of neuropsychiatry as it applied to the naval service.

- 1961 – The Armed Forces Radiobiology Research Institute was formed to work with the first DoD nuclear reactor for use in medical research, which was located at NNMC.

A Stratolab V balloon rose to 113,739 feet, a new record for open gondola manned balloon flight.

- 1962 – NAMRU-3 discovered the natural infection cycle of West Nile fever, which involves mosquitoes and birds as primary vectors and hosts.
- 1964 – The Naval Submarine Medical Center was established at the Naval Submarine Center, Groton, Connecticut; the Naval Medical Research Laboratory was disestablished.
- 1965 – NAMRU-2 opened the Addis Ababa Detachment in Ethiopia and a collecting station in Gambela, Ethiopia.

The Naval Aerospace Medical Institute (NAMI) was established to conduct training of aviation medical personnel and research in aviation and space medicine.

The Naval Blood Research Laboratory (NBRL) was established to conduct research, development, testing, and evaluation of methods for the preservation of blood and blood products.

NMRI established a Nursing Research Division as part of the Department of Behavioral Sciences.

- 1966 – NAMRU-2 opened a detachment at the Naval Support Activity Hospital in Da Nang, South Vietnam.

- 1967 – The Naval Dental Research Center was established at the Naval Training Station Great Lakes, Illinois.
- 1968 – NSMRL developed the nationally recognized three-agent stannous fluoride anticaries technique, which became the basis of the preventive dentistry program of the U.S. Navy and many other public health dental efforts.
- 1969 – NMNPRU became a command-level organization.
- NAMRU-2 first demonstrated the role of attenuated Rubella (German measles) vaccine in preventing naturally acquired disease in man.
- 1970 – NAMRU-2 established a detachment in Jakarta, Indonesia.
- NAMRU-2 Detachment, DaNang, Vietnam was disestablished.
- NAMI's research and development functions were separated and placed under the Naval Aerospace Medical Research Laboratory (NAMRL), Pensacola, Florida.
- 1971 – The Naval Aerospace Medical Research Laboratory Detachment was established at the NASA Michoud Assembly Facility for the development of biomedical data related to impact injury.
- 1974 – The BUMED Research Division became the Naval Medical Research and Development Command. Its mission statement is "To manage the Navy Medical Department Research, Development, Test, and Evaluation programs concerning the health, safety, and performance of Naval personnel."
- NAMRU-1 was disestablished.
- NAMRU-4 was disestablished.
- Naval Medical Research Unit No. 5 (NAMRU-5) was established at the Addis Ababa Detachment in Ethiopia.
- NMNPRU became the Naval Health Research Center (NHRC).
- 1977 – NAMRU-5 evacuated and closed following a communist takeover of the national government.
- 1979 – NAMRU-2 relocated from Taiwan to Manila, Republic of Philippines.

- 1981 – The Hyperbaric Research Facility was commissioned at NMRI, which featured five connecting dry pressure chambers and a single water chamber, all of which were capable of being set at various pressure levels.
- 1983 – The Naval Medical Research Center Detachment (NMRCDD) was established in Lima, Peru
- 1990 – Due to political turmoil, NAMRU-2 transferred to Jakarta, Indonesia.
- 1995 – NMRI experiments were carried aboard the Space Shuttles *Discovery* and *Endeavor*.
- 1998 – NMRI was closed under the Base Realignment and Closure Law.

The **Naval Medical Research Center (NMRC)** was commissioned as an Echelon 3 headquarters with the mission to provide leadership for NIDBR, NAMRU-2, NAMRU-3, and NMRCDD.

- 1999 – NMRC, along with the Walter Reed Army Institute of Research, moved to the new federal research laboratory facility, the Inouye Building, erected in the Forest Glen section of Silver Spring, Maryland.
- 2001 – NMRC research staff were deployed to conduct tests at the Pentagon following the crash of American Airlines flight 77 and to New York City to assist with biodetection.

NMRC analyzed more than 16,000 samples from the Capitol after anthrax was detected in the Hart Senate Office Building, the Supreme Court, and several area mail processing facilities.

- 2002 – NMRC established a laboratory at the Winter Olympics in Salt Lake City, Utah to ensure safety at the games.

Source: Shilling, Charles W., Captain, Medical Corps, U.S. Navy (Retired): *History of the Research Division, Bureau of Medicine and Surgery, U.S. Department of the Navy*